

Applicant: Cave et al.
Application No.: 10/667,633

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. - 88. (Canceled).

89. (New) A method of handoff of a wireless communication for a network station comprising:

detecting an omnidirectional sounding pulse from a wireless transmit/receive unit (WTRU) that is conducting the wireless communication via another network station;

communicating information related to the detected omnidirectional sounding pulse to an interface;

receiving from the interface a relative location of the WTRU and a notification to continue the wireless communication with the WTRU as part of a handover;

using a selectively operable beamforming antenna to direct a common channel toward the relative location of the WTRU; and

continuing the wireless communication with the WTRU.

90. (New) The method of claim 89 wherein the communicated information related to the detected omnidirectional sounding pulse includes information to facilitate determining the relative location of the WTRU.

91. (New) The method of claim 90 wherein the communicated information related to the detected omnidirectional sounding pulse includes signal strength information, where the signal strength information indicates that the received signal strength crossed a threshold.

92. (New) The method of claim 89 wherein the communicated information related to the detected omnidirectional sounding pulse includes geolocation information.

93. (New) The method of claim 89 further comprising transmitting a cyclic sweeping beacon channel.

94. (New) The method of claim 89 wherein detecting the omnidirectional sounding pulse includes detecting at least one of a plurality of omnidirectional sounding pulses.

95. (New) The method of claim 95 wherein the plurality of omnidirectional sounding pulses includes a first pulse having a first signal strength and a second pulse having a second signal strength, where the second signal strength is greater than the first signal strength.

96. (New) A method of handoff of a wireless communication for a network station comprising:

detecting an omnidirectional sounding pulse from a wireless transmit/receive unit (WTRU) that is conducting the wireless communication via another network station;

using a selectively operable beamforming antenna to direct a common channel toward a relative location of the WTRU;

continuing the wireless communication with the WTRU.

97. (New) The method of claim 96 including determining the relative location of the WTRU based on information related to the detected omnidirectional sounding pulse.

98. (New) The method of claim 97 wherein the information related to the detected omnidirectional sounding pulse includes signal strength information, where the signal strength information indicates that the received signal strength crossed a threshold.

99. (New) The method of claim 96 wherein the omnidirectional sounding pulse includes geolocation information.

100. (New) The method of claim 96 further comprising transmitting a cyclic sweeping beacon channel.

101. (New) The method of claim 96 wherein detecting the omnidirectional sounding pulse includes detecting at least one of a plurality of omnidirectional sounding pulses.

102. (New) The method of claim 101 wherein the plurality of omnidirectional sounding pulses includes a first pulse having a first signal strength and a second pulse having a second signal strength, where the second signal strength is greater than the first signal strength.

103. (New) A network station comprising:
a selectively operable beamforming antenna;
the base station configured to detect an omnidirectional sounding pulse from a wireless transmit/receive unit (WTRU) that is conducting the wireless communication via another network station;
the network station configured to communicate information related to the detected omnidirectional sounding pulse to an interface;
the network station configured to receive from the interface a relative location of the WTRU and a notification to continue the wireless communication with the WTRU as part of a handover; and
the network station configured to continue the wireless communication with the WTRU in response to receiving a relative location of the WTRU and a notification to continue the wireless communication with the WTRU by selectively operating the beamforming antenna to direct a common channel toward the relative location of the WTRU.

104. (New) The network station of claim 103 configured to communicate information related to the detected omnidirectional sounding pulse from the WTRU to the interface to facilitate the interface in determining the relative location of the WTRU.

105. (New) The network station of claim 104 configured to communicate information related to the detected omnidirectional sounding pulse from the WTRU including signal strength information, where the signal strength information indicates that the detected omnidirectional sounding pulse signal strength crossed a threshold.

106. (New) The network station of claim 103 configured to detect omnidirectional sounding pulses from wireless transmit/receive units (WTRUs) that include geolocation information.

107. (New) The network station of claim 103 wherein the selectively operable beamforming antenna is configured to transmit a cyclic sweeping beacon channel.

108. (New) A network station comprising:
a selectively operable beamforming antenna;
the base station configured to detect an omnidirectional sounding pulse from a wireless transmit/receive unit (WTRU) that is conducting the wireless communication via another network station; and

the network station configured to continue the wireless communication with the WTRU in response to detecting an omnidirectional sounding pulse from the WTRU by selectively operating the beamforming antenna to direct a common channel toward the relative location of the WTRU.

109. (New) The network station of claim 108 configured to direct a common channel toward a relative location of the WTRU where the relative location of the

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WTRU is determined from information related to the detected omnidirectional sounding pulse.

110. (New) The network station of claim 109 configured to determine the relative location of the WTRU from signal strength information, where the signal strength information indicates that the detected omnidirectional sounding pulse signal strength crossed a threshold.

111. (New) The network station of claim 108 configured to detect omnidirectional sounding pulses from wireless transmit/receive units (WTRUs) that include geolocation information.

112. (New) The network station of claim 108 wherein the selectively operable beamforming antenna is configured to transmit a cyclic sweeping beacon channel.

113. (New) The network station of claim 108 configured to detect a plurality of omnidirectional sounding pulses from the WTRU and to continue the wireless communication with the WTRU in response to detecting an omnidirectional sounding pulse from the WTRU that has a signal strength greater than a threshold.

114. (New) A wireless transmit/receive unit (WTRU) comprising:
an antenna configured to transmit an omnidirectional sounding pulse during a wireless communication with a first network station in response to a handover trigger;

the WTRU configured to receive a directional common channel from a second network station; and

the WTRU configured to continue the wireless communication with the second network station.

115. (New) The WTRU of claim 114 configured to include signal strength information in the omnidirectional sounding pulse.

116. (New) The WTRU of claim 114 configured to include location information in the omnidirectional sounding pulse.

117. (New) The WTRU of claim 114 further comprising:
a global positioning system (GPS) device configured to determine location information.

118. (New) The WTRU of claim 114 wherein the antenna is an isotropic antenna configured to transmit equally in all directions.

119. (New) The WTRU of claim 114 wherein the antenna is a selectively operable beamforming antenna configured to transmit directional beams and omnidirection sounding pulses comprising a plurality of directional sounding pulses.

120. (New) The WTRU of claim 114 wherein the antenna is configured to transmit a series of omnidirectional sounding pulses to handover the wireless communication where each pulse is transmitted a greater signal power than a previous pulse.